CONTENTS OF VOLUME 22

Volume 22 No. 1 February 1991

ANNA SFARD / On the Dual Nature of Mathematical Conceptions: Reflections on Processes and Objects as Different Sides of the Same Coin 1

WERNER BLUM and MOGENS NISS / Applied Mathematical Problem Solving, Modelling, Applications, and Links to Other Subjects – State, Trends and Issues in Mathematics Instruction 37

BEATRIZ SILVA D'AMBROSIO / The Modern Mathematics Reform Movement in Brazil and Its Consequences for Brazilian Mathematics Education 69

Book Reviews:

Heinrich Winter, *Entdeckendes Lernen im Mathematikunterricht – Einblicke in die Ideengeschichte und ihre Bedeutung für die Pädagogik* (JENS HOLGER LORENZ) 87

Pierre M. van Hiele, *Structure and Insight: A Theory of Mathematics Education* (JOHN P. PACE) 95

Announcements 104

Volume 22 No. 2 April 1991

NICK TAYLOR / Independence and Interdependence: Analytical Vectors for Defining the Mathematics Curriculum of Schools in a Democratic Society 107

DAVID TALL and MICHAEL THOMAS / Encouraging Versatile Thinking in Algebra Using the Computer 125

MONCEF ZAKI and FRANÇOIS PLUVINAGE / Démarches de résolution et de simulation face au problème de la ruine d'un joueur (Simulation and Solving Procedures in the "Gambler's Ruin" Problem) 149

WERNER BLUM and ARNOLD KIRSCH / Preformal Proving: Examples and Reflections 183

Short Communication:

ZHU ZIQIANG and EULA EWING MONROE / Mathematics Education in China Today: Four Problem Areas 205

Announcement 209

Volume 22 No. 3 June 1991

LUIS E. MORENO A. and GUILLERMINA WALDEGG / The Conceptual Evolution of Actual Mathematical Infinity 211

RAYMOND DUVAL / Structure du Raisonnement Déductif et Apprentissage de la Démonstration 233

HELGA JUNGWIRTH / Interaction and Gender – Findings of a Microethnographical Approach to Classroom Discourse 263

Short Communications:

RINA ZAZKIS' and URI LERON / Capturing Congruence with a Turtle 285

WARREN J. ATKINS, GILAH C. LEDER, PETER J. O'HALLORAN, GRAHAM H. POLLARD, and PETER TAYLOR / Measuring Risk Taking 297

Volume 22 No. 4 August 1991

MARTIN A. SIMON and DEBORAH SCHIFTER / Towards a Constructivist Perspective: An Intervention Study of Mathematics Teacher Development 309

ADRIAN TREFFERS / Meeting Innumeracy at Primary School 333

BARBARA J. REYS, ROBERT E. REYS, and ALFINIO FLORES PEÑAFIEL / Estimation Performance and Strategy Use of Mexican 5th and 8th Grade Student Sample 353

MUHAMMAD MAQSUD and CHAUDHRY M. KHALIQUE / Relationships of Some Socio-Personal Factors to Mathematics Achievement of Secondary School and University Students in Bophuthatswana 377

Book Review:

Valerie Walkerdine, *The Mastery of Reason: Cognitive Development and the Production of Rationality* (DAVID PINM) 391

Announcements 407

CONTENTS OF VOLUME 22

Volume 22 No. 5 October 1991

HANS-GEORG WEIGAND / Iteration Sequences and Their Representations 411

ASTRID PETTERSSON / Pupils' Mathematical Performance in Grades 3 and 6. A Longitudinal Study 439

LYN D. ENGLISH / Young Children's Combinatoric Strategies 451

Short Communication:
TONY BROWN / Hermeneutics and Mathematical Activity 475

Book Reviews:
Jean Lave, *Cognition in Practice: Mind, Mathematics, and Culture in Everyday Life* (ROY D. PEA) 481
Geoffrey B. Saxe, *Culture and Cognitive Development: Studies in Mathematical Understanding* (ROY D. PEA) 481
Robert B. Davis, Carolyn A. Maher, and Nel Noddings (eds.), *Constructivist Views on the Teaching and Learning of Mathematics* (A. J. DAWSON) 491

Volume 22 No. 6 December 1991

HEINZ STEINBRING / The Concept of Chance in Everyday Teaching: Aspects of a Social Epistemology of Mathematical Knowledge 503

EFRAIM FISCHBEIN, MARIA SAINATI NELLO, and MARIA SCIOLIS MARINO / Factors affecting Probabilistic Judgements in Children and Adolescents 523

EDWARD M. GRAY / An Analysis of Diverging Approaches to Simple Arithmetic: Preference and Its Consequences 551

BERNARD PARZYSZ / Representation of Space and Students' Conceptions at High School Level 575

GAILS S. GLINER / Factors Contributing to Success in Mathematical Estimation in Preservice Teachers: Types of Problems and Previous Mathematical Experience 595